

WHAT IS CLAIMED

1. Apparatus for obtaining a sample of bodily fluid through the skin, said apparatus comprising:

5 a housing,
a plurality of electrodes on said housing and positioned to contact a site on the skin,
an electrical signal generator for applying electrical energy to said electrodes, said
electrical signal generator supplying electrical energy in sufficient quantity to stimulate the skin
at said site to accomplish at least one of pain masking and bodily fluid engorgement at said site,
10 and

a skin-lancing device mounted in said housing for directing a skin-lancing medium
against the skin at said site to form an incision therein subsequent to the application of said
electrical energy.

2. Apparatus as claimed in claim 1 wherein said electrodes are positioned in an array to
15 surround said site.

3. Apparatus as claimed in claim 2 wherein said skin-lancing medium is directed through
the middle of said electrode array into said skin.

4. Apparatus as claimed in claim 1 wherein said electrical signal generator supplies high
voltage AC.

20 5. Apparatus as claimed in claim 4 wherein the quantity of electrical energy is less for
engorgement than pain masking.

6. Apparatus as claimed in claim 5 wherein said electrical energy is applied to said site for approximately 30 seconds, to produce bodily fluid engorgement.

7. Apparatus as claimed in claim 6 wherein said electrical power supply is adapted to apply electrical energy for at least one minute for pain masking and engorgement.

5 8. Apparatus as claimed in claim 4 where in the voltage range of said electrical power supply is from between approximately 10 to 25 kilovolts at low current (i.e. 100 miliamps).

9. Apparatus as claimed in claim 2 wherein said unit has a plurality of electrode pairs in an array surrounding said site.

10. Apparatus as claimed in claim 1 wherein said apparatus is a self-contained unit.

10 11. Apparatus as claimed in claim 10 wherein said electrical signal generator has an adjustable level of electrical energy.

12. Apparatus as claimed in claim 1 wherein said electrical signal generator is adapted to adjust the level of electrical energy.

13. Apparatus as claimed in claim 1 further comprising a device adjacent said skin lancing
15 device for indicating a bodily fluid parameter

14. Apparatus as claimed in claim 13 further comprising a capillary passage leading from the skin incision to said bodily fluid indicator device.

15. A method for obtaining a sample of bodily fluid through the skin, said method comprising:

20 applying electrical energy to a sampling site on said skin of sufficient quantity to stimulate the skin at said site to accomplish at least one of pain masking and bodily fluid engorgement at said site, and

subsequently making an incision at said site to remove a sample of bodily fluid.

16. A method as claimed in claim 15 wherein said electrical energy is applied in an array around said site.

17. A method as claimed in claim 15 wherein said electrical energy is applied in the form of high voltage AC.

18. A method as claimed in claim 17 wherein a lower level of electrical energy is applied for engorgement.

19. A method as claimed in claim 18 wherein said electrical energy is applied for approximately 30 seconds for bodily fluid engorgement.

20. A method as claimed in claim 18 wherein said electrical energy is applied for at least 60 seconds for pain masking and engorgement

21. A method as claimed in claim 17 wherein the voltage range is between approximately 15 and 25 kilovolts.

22. A method as claimed in claim 17 wherein the electrical energy is adjustable.

23. A method as claimed in claim 15 comprising the further step of compressing the site subsequent to making an incision for further enhancing bodily fluid expression.